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EXAMINER	
LEE, PHILIP C	
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2154	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/684,565	Applicant(s) GELVIN ET AL.	
	Examiner Philip C Lee	Art Unit 2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-63* is/are pending in the application.

4a) Of the above claim(s) *20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19 and 21-63* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. This action is responsive to the amendment and remarks filed on June 4, 2004.

2. Claims 1-19 and 21-63 are presented for examination.

3. The text of those sections of Title 35, U.S. code not included in this office action can be found in a prior office action.

Claim Rejections – 35 USC 132

4. The amendment filed 6/4/04 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: an operating system layer including non-real-time processes. Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections – 35 USC 112

5. Claims 1, 55, 58, 60 and 61-63 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. As per claims 1 (lines 9-10), 55 (8-9), 58 (lines 8-9), 60 (lines 10-11) and 61-

63 (lines 10-11), it is unclear what is "an operating system layer including non-real-time processes".

Claim Rejections – 35 USC 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 3, 9, 12-17, 19, 21-24, 26-28, 33-35, 37-40, 42-45, 47, 50, 52-53 and 55-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clare et al, U.S. Patent 6,414,955 (hereinafter Clare) in view of Creekmore et al, U.S. Patent 5,534,697 (hereinafter Creekmore) and Azarya et al, U.S. Patent 5,978,578 (hereinafter Azarya).

8. As per claims 1, 22 and 60-61, Clare taught the invention substantially as claimed for collecting and processing data in a sensor network, comprising:

> coupling a plurality of network elements including at least one node among an environment and at least one client computer (col. 6, lines 10-15; col. 16, lines 4-9);
>
> collecting data from the environment (col. 6, lines 10-15, 18-20);

remotely controlling at least one function of the at least one node (col. 14, lines 12-22); providing node information including node resource costs and message priority from the at least one node to the plurality of network elements (col. 4, lines 61-65); and distributing processing of the collected data among the plurality of network elements in response to the node information (col. 4, lines 61-65; col. 20, lines 28-40; col. 21, lines 38-41).

9. Clare did not teach a preprocessor operating on real-time processes. Creekmore taught wherein the node comprises at least one preprocessor operating on real-time processes and at least one processor coupled to the preprocessor (fig. 1; col. 3, lines 1-9, 17-20).

10. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare and Creekmore because Creekmore's system of a preprocessor operating on real-time processes would increase the efficiency of Clare's system by providing temporal filtration of real-time data to minimize the data link transmission rates (col. 3, lines 1-4).

11. Clare and Creekmore did not teach application program interfaces. Azarya taught configuring the node at one of a plurality of programming layers through a plurality of application program interfaces (APIs) (col. 9, lines 22-25).

12. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of to combine the teachings of Clare, Creekmore and Azarya because Azarya's system of using application program interfaces would increase the flexibility of Clare's and Creekmore's systems by allowing a user to customize a routine to access data through the application connectivity layer (col. 9, lines 22-25).

13. Clare, Creekmore and Azarya did not specifically detailing wherein the programming layers include a physical layer including real-time processes and an operating system layer including non-real-time processes. However, Azarya taught a system for providing computer operated real-time process control with the means for interacting with an external system (col. 6, lines 30-33). Azarya further taught the layer surrounding the operating system includes various functional modules that perform various roles in the OpenBus system (col. 19, lines 18-20). "Official Notice" is taken for the concept of a physical layer performing real-time processes with an external network and a layer performing not-real-time processes (e.g. housekeeping) are known and accepted in the art. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to use a physical layer to communicate with an external network and a layer for performing non-real-time processes because by doing so would increase the adaptability of the their systems with the International Organization for Standardization Open System Interconnection model (ISO/OSI model).

14. As per claim 3, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught comprising supporting at least one of wireless

communications, wired communications, and hybrid wired and wireless communications (col. 6, lines 6-9).

15. As per claim 9, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught comprising coupling at least one local user to the at least one node (col. 14, lines 16-22).

16. As per claim 12, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught wherein the at least one node comprises a plurality of node types, wherein the plurality of node types includes at least one node of a first type and at least one node of a second type, wherein a first network having a first node density is assembled using the at least one node of a first type, wherein a second network having a second node density is assembled using the at least one node of a second type, wherein the second network is overlayed onto the first network (col. 4, lines 6-63).

17. As per claim 13, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught comprising predistributing code and data anticipated for future use through the sensor network using low priority messages, wherein the code and the data are downloadable from at least one of storage devices of the plurality of network elements, and storage devices outside the sensor network (col. 8, lines 15-30).

18. As per claim 14, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught comprising automatically organizing the plurality of network elements in response to the node information, wherein the organizing comprises automatically controlling data transfer, processing, and storage within the sensor network (col. 2, lines 36-41).

19. As per claim 15, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught comprising supporting a plurality of levels of synchronization among different subsets of the plurality of network elements, wherein a first level of synchronization is supported among a first subset of the plurality of network elements, wherein a second level of synchronization is supported among a second subset of the plurality of network elements (col. 6, lines 63-col. 7, lines 4; col. 8, lines 27-39).

20. As per claim 16, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught comprising controlling data processing using at least one processing hierarchy, the at least one processing hierarchy controlling at least one of data classifications, data transfers, data queuing, data combining, processing locations, communications among the plurality of network elements (col. 18, lines 52-col. 19, lines 1).

21. As per claim 17, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught comprising transferring data using message packets, wherein the message packets are aggregated into compact forms in the at least one node

using message aggregation protocols, wherein the message aggregation protocols are adaptive to at least one of data type, node density, message priority, and available energy (col. 21, lines 38-41).

22. As per claim 19, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught wherein the at least one function includes data acquisition, data processing, communication, data routing, data security, programming, and node operation (col. 14, lines 16-22).

23. As per claim 21, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Azarya further taught wherein the plurality of APIs is layered (col. 9, lines 22-25).

24. As per claim 23, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 22 above. Clare further taught wherein information transfer among the plurality of network elements is controlled using a synchronism hierarchy established in response to the resource information and message priority information (col. 6, lines 63-col. 7, lines 4; col. 8, lines 27-39).

25. As per claim 24, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught wherein the at least one preprocessor performs at least one function selected from a group consisting of data acquisition, alert functions, and

controlling at least one operating state of the at least one node (col. 20, liens 28-40), wherein the at least one processor performs at least one function selected from a group consisting of signal identification, database management, adaptation, reconfiguration, and security (col. 18, lines 52-56).

26. As per claim 26, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught comprising coupling the at least one node to at least one of seismic, acoustic, infrared, thermal, force, vibration, pressure, humidity, current, voltage, magnetic, biological, chemical, acceleration and visible light sensors (col. 6, lines 13-20).

27. As per claim 27, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 26 above. Clare further taught comprising:

processing data gathered by the at least one sensor (col. 4, liens 34-38);

generating a predetermined identifying code representing the processed data (col. 4, lines 56-60); and

propagating the identifying code through the sensor network, wherein a high priority message containing information regarding a high priority event is represented by a high priority message code, and wherein receipt of the high priority message code by the at lest one node invokes a priority protocol that causes message packets to be broadcast to nodes adjacent to a path that will inhibit messaging from nodes not engaged in conveying

the information regarding the high priority event (col. 4, lines 56-col. 15, lines 8; col. 16, lines 28-49).

28. As per claim 28, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught comprising self-assembling the plurality of network elements, wherein search and acquisition modes of the at least one node search for participating ones of the plurality of network elements, wherein a determination is made whether each of the participating ones of the plurality of network elements are permitted to join the sensor network using a message hierarchy, wherein the sensor network is surveyed at random intervals for new nodes and missing nodes (col. 3, liens 48-49; col. 6, lines 37-62; col. 7, lines 66-col. 8, lines 48).

29. As per claim 33, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught comprising managing the sensor network as a distributed and active database using a distributed resource management protocol, wherein the plurality of network elements are reused among different applications, wherein the network elements are used in multiple classes of applications (col. 18, lines 65-col. 19, lines 4; col. 3, lines 55-65; col. 20, lines 58-65).

30. As per claim 34, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught wherein the plurality of network elements further comprises at least one database including at least one of storage devices coupled to at least one

of the plurality of network elements and storage devices of the at least one node (col. 8, lines 15-21; col. 10, lines 41-42).

31. As per claim 35, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 34 above. Clare further taught wherein the at least one database comprises data-driven alerting methods that recognize conditions on user-defined data relationships including coincidence in signal arrival, node power status, and network communication status (col. 15, lines 11-18).

32. As per claim 37, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught comprising:

collecting data by the at least one node (col. 18, lines 35-42);

performing at least one operation on the collected data in response to parameters established by a user, the at least one operation including at least one of energy detection, routing, processing, storing, and fusing (col. 18, lines 42-50).

33. As per claim 38, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 37 above. Clare further taught wherein the routing, processing, storing, and fusing are performed in response to at least one result of the energy detection (col. 18, lines 35-38).

34. As per claim 39, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 37 above. Clare further taught wherein the routing comprises selecting at least one data type for routing, selecting at least one of the plurality of network elements to which to route the selected data, selecting at least one route to the selected at least one of the plurality of network elements, and routing the selected at least one data type to the selected at least one of the plurality of network elements (col. 18, lines 48-67).

35. As per claims 40 and 44, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 37 above. Clare further taught wherein the processing comprises selecting at least one data type for processing, selecting at least one processing type, selecting at least one of the plurality of network elements to perform the selected at least one processing type, and transferring the selected at least one data type to the selected at least one of the plurality of network elements using at least one route through the sensor network (col. 18, lines 35-66).

36. As per claim 42, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 40 above. Clare further taught comprising aggregating data processed in a plurality of nodes for further processing by other nodes (col. 21, lines 29-41).

37. As per claim 43, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 40 above. Clare further taught comprising aggregating data processed by the at least one node for reporting to at least one user (col. 14, lines 16-22).

38. As per claim 45, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 37 above. Clare further taught wherein the fusing comprises transmitting at least one query request from a first node to at least one other node, wherein the first node collects data from the at least one other node in response to the at least one query request and processes the collected data (col. 4, lines 13-20).

39. As per claim 47, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught comprising determining a position of the at least one node (col. 7, lines 60-65).

40. As per claim 50, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught comprising providing location and time information to the plurality of network elements using a Global Positioning System (GPS) device (col. 7, lines 62-65).

41. As per claim 52, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught comprising communicating among the plurality of network elements using multihop communications (col. 5, lines 16-20).

42. As per claim 53, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare further taught wherein the environment is an environment associated with at least one of electronic equipment, mechanical equipment, electro-mechanical equipment, a facility, a structure, a material, a transportation system, a vehicle, an outdoor area, an indoor area, a biological system, a person, and an animal (col. 3, lines 55-59).

43. As per claims 55, 58-59 and 62-63, Clare taught the invention substantially as claimed for providing a sensor network, comprising:

coupling a plurality of network elements including at least one node among at least one environment and at least one client computer (col. 6, lines 10-15; col. 16, lines 4-9)

remotely controlling functions of the plurality of network elements (col. 14, lines 12-22);

providing node information including node resource cost and message priority to the plurality of network elements in response to at least one parameter of at least one signal received from the at least one environment (col. 4, lines 61-65); and

controlling at least one function of the plurality of network elements in response to the node information (col. 4, lines 61-65; col. 20, lines 28-40; col. 21, lines 38-41).

44. Clare did not teach a preprocessor operating on real-time processes. Creekmore taught wherein the node comprises at least one preprocessor operating on real-time processes and at least one processor coupled to the preprocessor (fig. 1; col. 3, lines 1-9, 17-20).

45. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare and Creekmore because Creekmore's system of a preprocessor operating on real-time processes would increase the efficiency of Clare's system by providing temporal filtration of real-time data to minimize the data link transmission rates (col. 3, lines 1-4).

46. Clare and Creekmore did not teach application program interfaces and means of coupling with the Internet. Azarya taught configuring the node at one of a plurality of programming layers through a plurality of application program interfaces (APIs) (col. 9, lines 22-25) and coupling the plurality of elements using the Internet (col. 3, lines 60-65).

47. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of to combine the teachings of Clare, Creekmore and Azarya because Azarya's system of using application program interfaces would increase the flexibility of Clare's and Creekmore's systems by allowing a user to customize a routine to access data through the application connectivity layer (col. 9, lines 22-25).

48. Clare, Creekmore and Azarya did not specifically detailing wherein the programming layers include a physical layer including real-time processes and an operating system layer including non-real-time processes. However, Azarya taught a system for providing computer operated real-time process control with the means for interacting with an external system (col. 6, lines 30-33). Azarya further taught the layer surrounding the operating system includes various

functional modules that perform various roles in the OpenBus system (col. 19, lines 18-20). "Official Notice" is taken for the concept of a physical layer performing real-time processes with an external network and a layer performing not-real-time processes (e.g. housekeeping) are known and accepted in the art. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to use a physical layer to communicate with an external network and a layer for performing non-real-time processes because by doing so would increase the adaptability of the their systems with the International Organization for Standardization Open System Interconnection model (ISO/OSI model).

49. As per claim 56, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 55 above. Clare further taught wherein the at least one parameter is remotely programmed using the at least one client computer (col. 14, lines 12-22).

50. As per claim 57, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 55 above. Clare further taught wherein the at least one function includes at least one of programming, configuring, assembling the plurality of network elements, distributing processing among the plurality of network elements, establishing communication paths among the plurality of network elements, selecting at least one mode of communication among the plurality of network elements, distributing data among the plurality of network elements, storing data, organizing at least one subnetwork among the plurality of network elements, controlling synchronization among the plurality of network elements, assembling data products, and reporting (col. 14, lines 16-24).

51. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clare, Creekmore and Azarya in view of Ginossar, U.S. Patent 6,477,143 (hereinafter Ginossar).

52. As per claim 2, Clare, Creekmore and Azarya taught the invention substantially as claimed wherein the at least one node includes sensing, processing, communications, and storage devices supporting a plurality of processing (see Clare, col. 3, lines 55-62; col. 18, lines 41-42). Clare, Creekmore and Azarya did not teach devices in the at least one node support plurality of protocol layers. Ginossar taught the at least one node includes sensing, processing, communications, and storage devices supporting a plurality of protocol layers (col. 21, lines 26-30).

53. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare, Creekmore, Azarya and Ginossar because Ginossar's method of supporting plurality of protocol layers would increased the applicability of Clare's, Creekmore's and Azarya's systems by demonstrating applications of the sensor node in a computer network operative in accordance with a TCP/IP protocol.

54. Claims 4-6, 8, 48-49 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clare, Creekmore and Azarya in view of Villa et al, U.S. Patent 6,550,012 (hereinafter Villa).

55. As per claim 4, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare, Creekmore and Azarya did not specifically teach including one gateway, one server, and one network. Villa taught comprising coupling the at least one node to the at least one client computer through the plurality of network elements, wherein the plurality of network elements includes at least one gateway, at least one server, and at least one network (col. 1, lines 61-64).

56. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare, Creekmore, Azarya and Villa because Villa's system of including a gateway, a server and a network would increased the field of use by including different system environment in their system.

57. As per claim 5, Clare, Creekmore, Azarya and Villa taught the invention substantially as claimed in claim 4 above. Clare further taught comprising performing at least one function using the at least one gateway, wherein the at least one function is at least one of protocol translation, sensor network management, management of transmissions from a remote user, and interfacing with at least one communication physical layer including wired local area networks, packet radio, microwave, optical, wireline telephony, cellular telephony, and satellite telephony (col. 16, lines 17-21).

58. As per claim 6, Clare, Creekmore, Azarya and Villa taught the invention substantially as claimed in claim 4 above. Clare further taught wherein the at least one network comprises wired

networks, wireless networks, and hybrid wired and wireless networks, wherein the at least one network comprises at least one of the internet, local area networks, wide area networks, metropolitan area networks and information service stations (col. 1, lines 14-17).

59. As per claim 8, Clare, Creekmore, Azarya and Villa taught the invention substantially as claimed in claim 4 above. Clare further taught wherein the plurality of network elements further includes at least one of repeaters and interrogators (col. 3, lines 61-62).

60. As per claim 48, Clare, Creekmore and Azarya taught the data could be remotely transferred among the plurality of network elements (see Clare, col. 14, lines 12-22). Clare, Creekmore and Azarya did not teach transferring software. Villa taught comprising transferring software among the plurality of network elements (col. 7, lines 48-54).

61. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare, Creekmore, Azarya and Villa because Villa's teaching of transferring software would enhanced Clare's, Creekmore's and Azarya's systems by increasing the field of use for their system.

62. As per claim 49, Clare, Creekmore and Azarya did not teach using public key security protocol. Villa taught comprising protecting communications using at least one public key security protocol (col. 10, lines 21-31; col. 13, lines 32-38).

63. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare, Creekmore, Azarya and Villa because Villa's method of using public key would improved the security of Clare's, Creekmore's and Azarya's system by allowing only the authorized receivers to decode messages in the communication network (col. 10, lines 18-20).

64. As per claim 51, Clare, Creekmore and Azarya did not teach using at least one communication modem. Villa taught communication among the plurality of network elements using at least one communication modem (col. 7, lines 33-37).

65. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clare, Creekmore and Azarya in view of Lee et al, U.S. Patent 5,937,163 (hereinafter Lee).

66. As per claim 7, Clare, Creekmore and Azarya taught wherein data includes signals or images, wherein code includes signal processing, decision support, and database elements, and wherein management includes operation of the at least one node and the sensor network (see Clare, col. 18, lines 65-col. 19, lines 1). Clare, Creekmore and Azarya did not teach using web-based tools for remote access. Lee taught comprising internetworking among the plurality of network elements to provide remote accessibility using World Wide Web-based tools for data, code, management, and security functions (coll. 8, lines 50-57).

67. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare, Creekmore, Azarya and Lee because Lee's means of remotely accessing using web-based tools would increased the efficiency of Clare's, Creekmore's and Azarya's system by allowing a remote user to manage the plurality of network elements through the internet.

68. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clare, Creekmore and Azarya in view of Pelissier et al, U.S. Patent 6,661,773 (hereinafter Pelissier).

69. As per claim 10, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare, Creekmore and Azarya did not teach a redundant information pathway. Pelissier taught comprising establishing at least one redundant information pathway among the plurality of network elements (col. 5, lines 65-col. 6, lines 5).

70. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare, Creekmore, Azarya and Pelissier because Pelissier's method of redundant information pathway would increased the reliability in Clare's, Creekmore's and Azarya's system by providing an alternated route when an interruption occur within the network (col. 3, lines 35-39).

71. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clare, Creekmore and Azarya in view of "Official Notice".

72. As per claim 11, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare, Creekmore and Azarya did not specifically teach wherein the network elements sets are layered. However, Clare taught wherein the network elements sets could be integrated on a chip (col. 19, lines 14-20). "Official Notice" is taken that the concept of layered structure of the network elements sets on a chip is known and accepted in the art. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to include the network elements sets in a layered structure to decrease the space require by the network elements sets.

73. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clare, Creekmore and Azarya in view of Diehl et al, U.S. Patent 5,563,948 (hereinafter Diehl).

74. As per claim 18, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 17 above. Clare, Creekmore and Azarya did not teach including decoy message. Diehl taught wherein the message packets include decoy message packets, wherein information to be transferred is impressed on random message packets to provide communication privacy (col. 5, lines 14-17, 49-51).

75. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare, Creekmore, Azarya and Diehl because

Diehl's method of using decoy message would improved the security of Clare's, Creekmore's and Azarya's systems by preventing unauthenticated users from intercepting user information.

76. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clare, Creekmore and Azarya in view of Weinberger, U.S. Patent 6,499,027 (hereinafter Weinberger).

77. As per claim 36, Clare, Creekmore and Azarya taught comprising implementing the at least one database in small foot print databases at a level of the at least one node (see Clare, col. 8, lines 15-21). Clare, Creekmore and Azarya did not teach including a standard query database. Weinberger taught comprising a standard query language (SQL) database system at a level of at least one server (col. 5, lines 6-13).

78. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare, Creekmore, Azarya and Weinberger because Weinberger's method of including a standard query language database system would increased the field of use of Clare's, Creekmore's and Azarya 's systems by including different components of the network environment in their system.

79. Claims 25 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clare, Creekmore and Azarya in view of Pottie et al, applicant admission of prior art (hereinafter Pottie).

80. As per claims 25 and 41, Clare, Creekmore and Azarya taught the invention substantially as claimed in claims 1 and 40 above. Clare, Creekmore and Azarya did not teach decision probability of a detected event. Pottie taught comprising controlling data processing and transmission in the at least one node in response to a decision probability of a detected event (page 3, paragraph 5).

81. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare, Creekmore, Azarya and Pottie because Pottie's method of using detection probability would increased the likelihood of detection in Clare's, Creekmore's and Azarya 'a systems by providing detection strategy based on the probability of detecting an event.

82. Claims 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clare, Creekmore and Azarya in view of Lin et al, Applicant Admission of Prior Art (hereinafter Lin).

83. As per claim 29, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare, Creekmore and Azarya did not teach self-assembling the elements into a multi-cluster network. Lin taught comprising self-assembling the plurality of network elements into a multi-cluster network (Abstract; page 4, paragraph 2-3).

84. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare, Creekmore, Azarya and Lin because

Lin's system of self-assembling the plurality of network elements into a multi-cluster network would increased the robustness of Clare's, Creekmore's and Azarya's systems by allowing self-assembling of elements into the cluster network in the event of topological changes (abstract).

85. As per claims 30-31, Clare, Creekmore, Azarya and Lin taught the invention substantially as claimed in claim 29 above. Lin further taught directing at least one node to become at least one base node of a particular cluster number and directing at least one other node to become at least one remote node of a particular cluster number (page 4, paragraph 3, *Lemma 1*). It is inherent that if a start node is selected as a base node, nodes adjacent to the base node are remote nodes.

86. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clare, Creekmore and Azarya in view of Barry et al, U.S. Patent 6,504,631 (hereinafter Barry).

87. As per claim 46, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare, Creekmore and Azarya did not teach producing energy beam from the plurality of nodes. Barry taught wherein the at least one node comprises a plurality of nodes with each of the plurality of nodes including at least one bi-static sensor and a generator for producing at least one energy beam that is radiated from the plurality of nodes, wherein the at least one energy beam comprises a combined probe beam and signal code for beam intensity control and propagation measurement, wherein the at least one energy beam is modulated in time

to provide an identifying code corresponding to a source node, wherein the at least one energy beam is a type selected from a group comprising infrared, visible, acoustic, and microwave beams (col. 5, lines 1-11; col. 6, lines 49-58).

88. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare, Creekmore, Azarya and Barry because Barry's system of the plurality of nodes that generate beam would enhanced Clare's, Creekmore's and Azarya's systems by using energy beam to communicate among the plurality of nodes.

89. Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clare, Creekmore and Azarya in view of Larsson, U.S. Patent 6,389,483 (hereinafter Larsson).

90. As per claim 54, Clare, Creekmore and Azarya taught the invention substantially as claimed in claim 1 above. Clare, Creekmore and Azarya did not teach coupling a plurality of software modules using interfaces. Larsson taught comprising:

providing a plurality of software modules (col. 9, lines 56-63);

supporting couplings among the plurality of software modules using a plurality of interfaces (col. 2, lines 11-18; col. 10, lines 2-4);

reusing the plurality of interfaces among the plurality of software modules by changing at least one inter-module coupling (col. 18, lines 65-col. 19, lines 3); and

dynamically configuring the plurality of software modules at run-time (col. 6, lines 55-59; col. 25, lines 1-2).

91. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare, Creekmore, Azarya and Larsson because Larsson's system of dynamically configuring the software modules would increased the adaptability of Clare's, Creekmore's and Azarya's systems by allowing reuse of the old software modules by dynamically modifying the old software modules (col. 1, lines 58-61).

92. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clare, Creekmore, Azarya and Lin in view of Pottie.

93. As per claim 32, Clare, Creekmore, Azarya and Lin taught the invention substantially as claimed in claim 29 above. Clare, Creekmore, Azarya and Lin did not specifically detailing means of establishing synchronism. Pottie taught comprising establishing synchronism among the plurality of network elements using the assembly packets (page 7, paragraph 1).

94. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teachings of Clare, Creekmore, Azarya, Lin and Pottie because Pottie's means of synchronism would increased the reliability in Clare's, Creekmore's, Azarya's and Lin's systems by detecting failure of the network elements using assembly packets.

95. Applicant's arguments with respect to claims 1-19 and 21-63, filed 2/24/04, have been fully considered but are not deemed to be persuasive and are moot in view of the new grounds of rejection.

96. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Froeberg, U.S. Patent 6,072,431, disclosed a system with GPS process as a real-time process.

97. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action. Any inquiry concerning this communication or earlier communications form the examiner should be directed to Philip Lee whose telephone number is (703) 305-7721. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

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